Serial No.: Not yet assigned

Filed

: Herewith

Page

: 3 of 11

## **IN THE CLAIMS:**

Please amend the claims as follows:

1. (Original) An organic electroluminescence device emitting white light which comprises a pair of electrodes, at least two light emitting layers and an electron transporting layer comprising a heterocyclic derivative having nitrogen atom or a heterocyclic derivative having silicon atom, the light emitting layers and the electron transporting layer being disposed between the pair of electrodes, wherein

an energy gap of a host compound comprised in each light emitting layer Eg(Host-i) satisfies following relation (I):

$$2.9 \text{ eV} \leq \text{Eg(Host-i)} \qquad \dots \text{ (I)}$$

wherein Eg(Host-i) represents an energy gap of a host compound comprised in an i-th light emitting layer from the electron transporting layer, i representing an integer of 1 to n,

an energy gap of the heterocyclic derivative having nitrogen atom or the heterocyclic derivative having silicon atom comprised in the electron transporting layer Eg(ETM) satisfies following relation (II):

$$2.9 \text{ eV} < \text{Eg(ETM)}$$
 ... (II)

and

an ionization potential of a host compound comprised in a light emitting layer adjacent to the electron transporting layer (Ip(Host-1)) and an ionization potential of the heterocyclic derivative having nitrogen atom or the heterocyclic derivative having silicon atom comprised in the electron transporting layer (Ip(ETM)) satisfy following relation (III):

$$Ip(ETM) \le Ip(Host-1)+0.3 \text{ eV} \qquad \cdots \text{ (III)}$$

2. (Original) The organic electroluminescence device emitting white light according to Claim 1, wherein the energy gap of a host compound comprised in each light emitting layer

Serial No.: Not yet assigned

Filed : Herewith Page : 4 of 11

Eg(Host-i) and the energy gap of the heterocyclic derivative having nitrogen atom or the heterocyclic derivative having silicon atom comprised in the electron transporting layer Eg(ETM) satisfy following relation (IV):

$$2.9 \text{ eV} < \text{Eg(ETM)} \leq \text{Eg(Host-i)} \qquad \cdots \text{(IV)}$$

- 3. (Currently Amended) The organic electroluminescence device emitting white light according to any one of Claims 1 and 2 to Claim 1, wherein at least one light emitting layer comprises a dopant having an energy gap of 2.9 eV or smaller.
- 4. (Currently Amended) The organic electroluminescence device emitting white light according to any one of Claims 1 and 2 to Claim 1, which comprises at least two light emitting layers having different peak wavelengths of light emission.
- 5. (Currently Amended) The organic electroluminescence device emitting white light according to any one of Claims 1 and 2 to Claim 1, wherein a difference between a greatest peak wavelength of light emission and a second greatest peak wavelength of light emission is 50 nm or greater.
- 6. (Original) The organic electroluminescence device emitting white light according to Claim 1, wherein the electron transporting layer or an interfacial region between the electron transporting layer and a cathode comprises a metal having a work function of 2.8 eV or smaller or a compound of the metal.
- 7. (Original) The organic electroluminescence device emitting white light according to Claim 6, wherein the metal is Na, K, Rb, Cs, Ca, Sr or Ba.

Serial No.: Not yet assigned

Filed : Herewith Page : 5 of 11

8. (Currently Amended) The organic electroluminescence device emitting white light according to any one of Claims 1 and 2 to Claim 1, wherein the electron transporting layer comprises a heterocyclic derivative having nitrogen atom represented by following general formula (1):

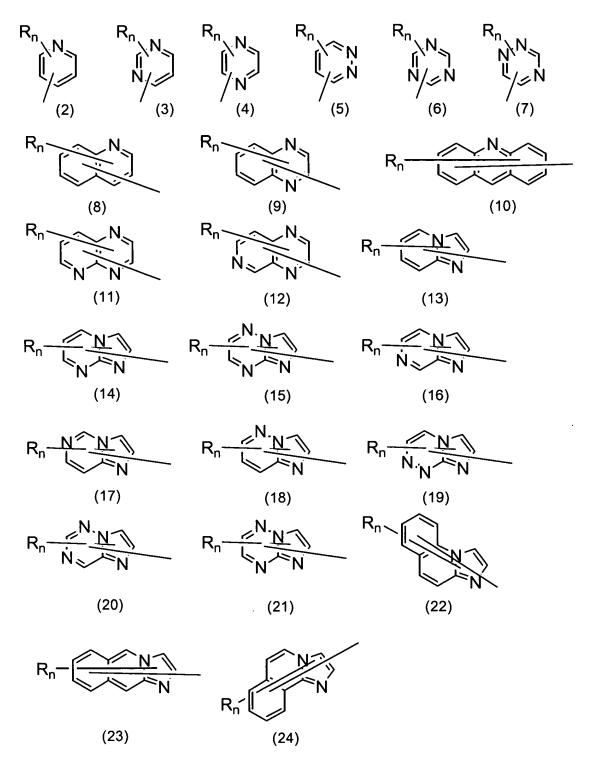
$$HAr-L-Ar^{1}-Ar^{2}$$
 (1)

wherein HAr represents a substituted or unsubstituted heterocyclic group having nitrogen atom, Ar<sup>1</sup> represents a substituted or unsubstituted divalent aromatic hydrocarbon group having 6 to 40 carbon atoms, Ar<sup>2</sup> represents a substituted or unsubstituted aryl group having 6 to 40 carbon atoms or a substituted or unsubstituted heteroaryl group having 3 to 40 carbon atoms, and L represents a single bond or a substituted or unsubstituted arylene group.

9. (Original) The organic electroluminescence device emitting white light according to Claim 8, wherein HAr represents a heterocyclic group represented by one of following formulae (2) to (24):

Serial No.: Not yet assigned

Filed: Herewith Page: 6 of 11



wherein R represents a substituted or unsubstituted aryl group having 6 to 40 carbon atoms, a substituted or unsubstituted heteroaryl group having 3 to 40 carbon atoms, a substituted or

Serial No.: Not yet assigned

Filed : Herewith Page : 7 of 11

unsubstituted alkyl group having 1 to 20 carbon atoms or a substituted or unsubstituted alkoxyl group having 1 to 20 carbon atoms, **n** represents an integer of 0 to 5 and, when **n** represents an integer of 2 or greater, a plural R may represent a same group or different groups, and the plurality of groups represented by R may be bonded to each other to form a cyclic structure; and formula (A):

$$\begin{bmatrix}
N \\
Z
\end{bmatrix}_{X}$$
(A)

wherein a plural R<sup>1</sup> each independently represent hydrogen atom, a halogen atom, a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 40 carbon atoms, a substituted or unsubstituted heteroaryl group having 3 to 40 carbon atoms or a group forming a condensed aromatic group, Z represents oxygen atom, sulfur atom or a group represented by NR', R' representing a same atom or group as that represented by R<sup>1</sup>, and x represents an integer of 2 to 8; or a substituted or unsubstituted carbazolyl group.

10. (Original) The organic electroluminescence device emitting white light according to Claim 8, wherein HAr represents a group expressed by one of following formulae (25) to (44):

Serial No.: Not yet assigned Filed: Herewith Page : 8 of 11

11. (Original) The organic electroluminescence device emitting white light according to Claim 8, wherein L represents a group represented by one of following formulae (45) and (46):

Serial No.: Not yet assigned

Filed : Herewith Page : 9 of 11

wherein  $R^2$  represents a substituted or unsubstituted aryl group having 6 to 40 carbon atoms, a substituted or unsubstituted heteroaryl group having 3 to 40 carbon atoms, a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms or a substituted or unsubstituted alkoxyl group having 1 to 20 carbon atoms, **m** represents an integer of 0 to 4 and, when **m** represents an integer of 2 or greater, a plural  $R^2$  may represent a same group or different groups, and a plural group represented by  $R^2$  may be bonded to each other to form a cyclic structure.

12. (Original) The organic electroluminescence device emitting white light according to Claim 8, wherein Ar<sup>2</sup> represents a group represented by one of following formulae (47) to (53):

$$R^{3}p$$
 $R^{3}p$ 
 $R^{3}p$ 

wherein R<sup>3</sup> represents a substituted or unsubstituted aryl group having 6 to 40 carbon atoms, a substituted or unsubstituted heteroaryl group having 3 to 40 carbon atoms, a substituted or

Serial No.: Not yet assigned

Filed: Herewith Page: 10 of 11

unsubstituted alkyl group having 1 to 20 carbon atoms or a substituted or unsubstituted alkoxyl group having 1 to 20 carbon atoms, **p** represents an integer of 0 to 9, **q** represents an integer of 0 to 5 and, when **p** or **p+q** represents an integer of 2 or greater, a plural R<sup>3</sup> may represent a same group or different groups, and a plural group represented by R<sup>3</sup> may be bonded to each other to form a cyclic structure.

13. (Original) The organic electroluminescence device emitting white light according to Claim 8, wherein Ar<sup>1</sup> represents a group represented by one of following formulae (54) and (55):

$$R^{5}$$
 $R^{6}$ 
 $R^{7}$ 
 $R^{8}$ 
 $R^{9}$ 
 $R^{10}$ 
 $R^{12}$ 
 $R^{17}$ 
 $R^{17}$ 
 $R^{16}$ 
 $R^{15}$ 
 $R^{15}$ 
 $R^{15}$ 
 $R^{15}$ 

wherein R<sup>4</sup> to R<sup>17</sup> each independently represent hydrogen atom, a halogen atom, a substituted or unsubstituted aryl group having 6 to 40 carbon atoms, a substituted or unsubstituted aryloxyl group having 6 to 40 carbon atoms, a substituted or unsubstituted heteroaryl group having 3 to 40 carbon atoms, a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms or a substituted or unsubstituted alkoxyl group having 1 to 20 carbon atoms, and Ar<sup>4</sup> each represent a substituted or unsubstituted aryl group having 6 to 40 carbon atoms or a substituted or unsubstituted heteroaryl group having 3 to 40 carbon atoms.